

ABSTRACT

A nanocomposite reinforced polymer and blends produced therefrom used for engineering and other purposes with mechanical properties such as stiffness, elasticity, tensile strength and lubricity which can be varied by metering the polymers and nanocomposite polymers prior to and during extrusion and by modifying the extrusion process by varying the parameters thereof including time, temperature and overall cool down time as well as controlling the draw down extrusion ratio, and the application in multilayer extrusion. The mechanical properties of the final resultant nanocomposite reinforced polymer blend can be accurately controlled by varying the mixing proportions with pure virgin polymers and copolymers. This unique process provides a method for customizing the mechanical properties of a nanocomposite reinforced polymer blend to specific target values which may exceed or be located between the mechanical properties values of the individual components of the resultant polymer blend.